

REMARKS

The Office Action dated September 7, 2006 has been received and carefully noted. The above amendments to the claims and the following remarks are submitted as a full and complete response thereto.

In accordance with the foregoing, claims 1, 15, and 19 have been amended to improve clarity of the features recited therein. No new matter is being presented, and approval and entry are respectfully requested. As will be discussed below, it is also requested that all of claims 1-20 be found allowable as reciting patentable subject matter.

Claims 1-20 stand rejected and pending and under consideration.

On page 2 of the Office Action, claims 1-4, 7-9, 10, 15-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Adrangi et al. (U.S. Patent Application Publication No. 2004/0120328, hereinafter referred to as Adrangi) in view of Liu et al. (U.S. Patent Application Publication No. 2004/0120295 A1, hereinafter referred to as Liu '295).

Independent claim 1, upon which claims 2-14 are dependent, recites a system for providing secure mobile connectivity that implements Mobile IP Home Agent functionality via distributed components, including a mobile node belonging to a home network located within a secure network. The mobile node has a network interface configured to communicate with other nodes, and has only one security association and has only one mobility binding with a Home Agent (HA) for the Mobile IP Home Agent functionality. The system also includes a Proxy Home Agent (PHA) connected to the

home network and located within the secure network. The PHA is configured to provide a proxying functionality and the HA is located outside of the secure network. The HA is configured to provide a signaling and tunneling functionality and to notify the PHA of the mobile node. The system further includes a VPN gateway located outside the secure network and configured to work in conjunction with the HA.

Independent claim 15, upon which claims 16-20 are dependent, recites a method for secure communication between a mobile node associated with a home network in a secure network and a correspondent node, including establishing a Proxy Home Agent (PHA) located within the secure network to monitor data directed to the mobile node, establishing a Home Agent configured to create only one security association with the mobile node and only one mobility binding with the mobile node and to notify the PHA of the mobile node, and collecting data directed to the mobile node. The method also includes packaging the collected data in a VPN secure tunnel to an internal address of the mobile node to create VPN packaged data, and tunneling the VPN packaged data to a current address of the mobile node.

Independent claim 19 recites a system for secure mobile connectivity that implements Mobile IP Home Agent functionality via distributed components, including means for establishing a Proxy Home Agent (PHA) located within a secure network to monitor data directed to a mobile node, means for establishing a Home Agent configured to create only one security association with the mobile node and only one mobility binding with the mobile node and to notify the PHA of the mobile node, and means for

collecting data directed to the mobile node. The system also includes means for packaging the collected data in a VPN secure tunnel to an internal address of the mobile node to create VPN packaged data, means for tunneling the VPN packaged data to a current address of the mobile node, and means for the Home Agent to communicate to the PHA that the mobile node has moved outside its home network. The system includes means for the Home Agent to communicate to the PHA that the mobile node has come back to its home network, and means for enabling the PHA to create and remove a proxy ARP entry for a permanent address associated with the mobile node.

As will be discussed below, Adrangi and Liu fail to disclose or suggest the elements of any of the presently pending claims.

Adrangi generally describes a seamless, secure roaming solution across enterprise firewalls. Liu '295 generally describes a method to provide a secure network path through an inner and outer firewall pair between a mobile node on a foreign network and a corresponding node on a home network.

In the Office Action, it is contended that Adrangi discloses a mobile node that has only one security association and one mobility binding with a Home Agent for the Mobile IP Home Agent functionality. Specifically, the Office Action refers to an IPSec tunnel with a VPN 225 and refers to the care-of-address COAx generally described in Adrangi. Also, according to the Office Action, the internal home agent 300 of Adrangi does perform the claimed function of proxying by forwarding a received packet to the VPN gateway. The Office Action also provides that the outside home agent 305 of

Adrangi does perform the claimed function of providing a signaling and tunneling functionality. However, the Office Action recognized that Adrangi does not disclose that the HA is configured to notify the PHA of the mobile node.

Instead, the Office Action indicates that the MIP proxy 102 of Liu '295 acts as a home agent and the home agent 112 of Liu '295 acts as the proxy home agent. The Examiner states that the MIP proxy 102 performs the action of sending a registration request, which is a notification of the mobile node 102, on behalf of the mobile node 120 to the home agent 112. According to the examiner, the combination of Adrangi with Liu '295 renders the recitations of independent claim 1 obvious.

However, Applicants respectfully disagree with the contentions made in the Office Action. Adrangi does not teach or suggest, at least, “the mobile node having **only one** security association **and only one** mobility binding with a Home Agent (HA) for the Mobile IP Home Agent functionality,” emphasis added, as recited in independent claim 1. Instead, Adrangi discloses multiple possible mobility bindings (e.g. COAx and COAT) with the Home Agent for the Mobile IP home agent. The recitations of independent claim 1 have been amended to clarify that the mobile node has only one mobility binding with the home agent for the mobile IP home agent functionality. Thus, Adrangi does not teach or suggest the recitations of the mobile node recited in independent claim 1 as indicated in the Office Action. Liu '295, in turn, is silent as to teaching or suggesting such features of the mobile node. Thus, a combination of Adrangi and Liu '295 would fail to teach or suggest all the recitations of independent claim 1.

Independent claim 15 recites, “establishing a Home Agent configured to create only one security association with the mobile node and only one mobility binding with the mobile node and to notify the PHA of the mobile node,” and independent claim 19 recites, “means for establishing a Home Agent configured to create only one security association with the mobile node and only one mobility binding with the mobile node and to notify the PHA of the mobile node.” Because independent claims 15 and 19 include similar claim features as those recited in independent claim 1, although of different scope, and because the Office Action refers to similar portions of the cited references to reject independent claims 15 and 19, the arguments presented above supporting the patentability of independent claim 1 are incorporated herein to support the patentability of independent claims 15 and 19.

It is respectfully requested that independent claims 1, 15, and 19 and related dependent claims be allowed.

In the Office Action, claims 5, 9, and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Adrangi in view of Liu ‘295 and in further view of Liu et al. (U.S. Patent Application Publication No. 2004/0212900 A1 hereinafter referred to as Liu ‘900). The rejection is respectfully traversed.

Dependent claims 5, 9, and 14 depend from independent claim 1. Because the combination of Adrangi, Liu ‘295, and Liu ‘900 must teach, individually or combined, all the recitations of the base claim and any intervening claims of independent claim 1, the

arguments presented above supporting the patentability of independent claim 1 over Adrangi and Liu '295 are incorporated herein.

Liu '900 generally describes packet-classification network services, such as firewalls. Specifically, Liu '900 describes a network device having a plurality of interfaces to receive and transmit packets of data. The network device includes a forwarding element to apply classification rules to the packets. A packet classification chain that resides at least temporarily on the network device is also provided. The chain includes classification rules, an associated action, and an update field to trigger insertion or deletion of the rule in the chains.

However, upon consideration of the description provided in Liu '900, this reference does not cure the deficiencies of Adrangi and Liu '295. Similarly to Adrangi and Liu '295, Liu '900 does not teach or suggest, at least "the mobile node having only one security association and only one mobility binding with a Home Agent (HA) for the Mobile IP Home Agent functionality," as recited in independent claim 1. Thus, a combination of Adrangi, Liu '295, and Liu '900 would fail to teach or suggest all the recitations of independent claim 1.

Accordingly, it is respectfully requested that independent claim 1 and related dependent claims 5, 9, and 14 be allowed.

In the Office Action, claims 6, and 11-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Adrangi in view of Liu '295 and Liu '900 and further in view

of Mikkonen (U.S. Patent Application Publication No. 2004/0001475, hereinafter referred to as Mikkonen). The rejection is respectfully traversed.

Dependent claims 6 and 11-13 depend from independent claim 1. Because the combination of Adrangi, Liu '295, Liu '900, and Mikkonen must teach, individually or combined, all the recitations of the base claim and any intervening claims of independent claim 1, the arguments presented above supporting the patentability of independent claim 1 over Adrangi, Liu '295, and Liu '900 are incorporated herein.

Mikkonen generally describes a method of routing a data packet, whereby a piece of information, which is directly associated with the data packet, such as a user identity, is first determined and then the data packet is routed at least partially on the basis of the piece of information. However, upon consideration of the description provided in Mikkonen, this reference does not cure the deficiencies of Adrangi, Liu '295, and Liu '900. Similarly to Adrangi, Liu '295, and Liu '900, Mikkonen is silent as to teaching or suggesting, at least, "the mobile node having only one security association and only one mobility binding with a Home Agent (HA) for the Mobile IP Home Agent functionality," as recited in independent claim 1. Thus, a combination of Adrangi, Liu '295, Liu '900, and Mikkonen would fail to teach or suggest all the recitations of independent claim 1.

Accordingly, it is respectfully requested that independent claim 1 and related dependent claims 6 and 11-13 be allowed.

CONCLUSION:


In view of the above, Applicant respectfully submits that the claimed invention recites subject matter which is neither disclosed nor suggested in the cited prior art. Applicant further submits that the subject matter is more than sufficient to render the claimed invention unobvious to a person of skill in the art. Applicant therefore respectfully requests that each of claims 1-20 be found allowable and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the Applicant respectfully petitions for an appropriate extension of time.

Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,


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